

Drafting I through CAD			Grades 9-12
Standards		Benchmarks	Activities/Examples
8. Students will develop an understanding of the attributes of design.	H	The design process includes defining a problem, brainstorming, researching and generating ideas, identifying criteria and specifying constraints, exploring possibilities, selecting an approach, developing a design proposal, making a model or prototype, testing and evaluating the design using specifications, refining the design, creating or making it, and communicating processes and results.	Design Process will be demonstrated and students will perform it on each project made in class.
	I	Design problems are seldom presented in a clearly defined form.	Students will sketch multiview and pictorial drawings.
	K	Requirements of a design, such as criteria, constraints, and efficiency, sometimes compete with each other.	Students will design and build a CO2 car to race.
9. Students will develop an understanding of engineering design.	J	Engineering design is influenced by personal characteristics, such as creativity, resourcefulness, and the ability to visualize and think abstractly.	Students will use the computer program “Inventor” to draw their hand sketched assignments they have completed.
	K	A prototype is a working model used to test a design concept by making actual observations and necessary adjustments.	Students will design and build a CO2 car to race. Read, discuss, demonstrate, design, and draw a 400 square foot lake structure. The lake structure will be hand sketched and then drawn on the computer program “Revit.”
	L	The process of engineering design takes into account a number of factors.	Students will design and build a CO2 car to race.
10. Students will develop an understanding of the role of troubleshooting, research and development, invention and innovation, and experimentation in problem solving.	L	Many technological problems require a multidisciplinary approach.	Students will design and build a CO2 car to race.
11. Students will develop the abilities to apply the design process.	N	Identify criteria and constraints and determine how these will affect the design process.	Design Process will be demonstrated and students will perform it on each project made in class.

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17. Students will develop an understanding of and be able to select and use information and communication technologies.	P	There are many ways to communicate information, such as graphic and electronic means.	Students will sketch multiview and pictorial drawings.
	Q	Technological knowledge and processes are communicated using symbols, measurement, conventions, icons, graphic images, and languages that incorporate a variety of visual, auditory, and tactile stimuli.	Students will apply knowledge and processes that communicate measurements, symbols, and graphic images. All of the assignments in Drafting I will have these elements in them.
20. Students will develop and understanding of and be able to select and use construction technologies.	K	Structures are constructed using a variety of processes and procedures.	Read, discuss, demonstrate, design, and draw a 400 square foot lake structure. The lake structure will be hand sketched and then drawn on the computer program “Revit.”